

APPLICANT: FREY, Bernhard
SERIAL NO.: 10/563,670
FILED: May 11, 2006
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Amendments to the Specification:

On page 1, line 4, immediately after the title, please insert:

-- Prior Application Data

The present application is a national phase application of International Application No. PCT/EP2004/007352, entitled "ECCENTRIC DRIVE MECHANISM FOR VOLUMETRIC PUMPS OR MOTORS", with international filing date, July 6, 2004, which in turn claims priority from German application No. 103 30 757.5, filed on July 7, 2003.--

Please replace the paragraph on page 1, lines 5-7, with the following paragraph:

-- The invention relates to an eccentric drive mechanism for volumetrically acting unidirectional pumps or motors having the features of the preamble of claim 1. Such drive mechanisms are known in the prior art. --

Please replace the paragraph starting on page 1, line 28 and ending on page 2, line 11, with the following paragraph:

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-- However, in the respective high pressure phase, oscillating states of movement with stationary phases prevail, at least in addition to continuous relative rotary movements, between the bearing surfaces of the transverse bearing and in ~~practise~~ practice do not permit the build-up of adequately supportive hydrodynamic lubricant films. Thus, in these regions, it is not only important to introduce an adequate lubricant cushion into the bearing gap during the low pressure phases - this takes place via the stroke bearing which stands in communication with the transverse bearing - but rather it is also important not to permit this cushion to flow out too quickly in the high pressure phases. This outflow can in turn take place via the stroke bearing. Having regard to the above-mentioned cut-out in the bearing surfaces of the stroke bearing the known eccentric drive mechanisms require improvement with regard to this desired retention of lubricant pressure. --

Please replace the paragraph on page 2, lines 13-22, with the following paragraphs:

-- The object of the invention is thus the provision of an eccentric drive mechanism for a pump, which comprises, is characterized with respect to the bearing, by effective and reliable lubrication by means of a fluid and retention of lubricant, pressure retention of the fluid lubricant, and separation of the fluid from the material to be pumped.

The way this object is satisfied is determined by the features of independent claim 1.

Preferred embodiments of the invention are defined by dependent claims 2 through 6.

In the context of the combination of these features of the solution it is, amongst other things, important that the flow connection between the transverse bearing and the passage system of the lubricating fluid supply in the high pressure phase is in each case closed by the non-interrupted bearing surfaces of the stroke bearing and thus that an undesired return flow of the lubricating fluid is prevented. --

Please replace the paragraph on page 4, lines 24-26, with the following paragraph:

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-- [[Fig. 3]] Figs. 3A and 3B [[a]] ~~part section~~ sections of the eccentric drive mechanism of the pump in accordance with Figs. 1 and 2 oriented transverse to the main shaft and kept to a larger scale and having one and a plurality of hollow spaces respectively, and --

Please replace the paragraph starting on page 4, line 28 and ending on page 5, line 11, with the following paragraph:

-- The eccentric drive mechanism shown in Figs. [[3]] 3A, 3B, and 4 includes a stroke member (HG) which is rotationally fixedly connected to the shaft (W) and which has an eccentric stroke bearing (HL) with respect to this axis (XX) of the shaft. The stroke bearing (HL) connects the stroke member (HG) to a coupling member (KG) which does not participate in the rotary movement and which is in turn associated via a transverse bearing (QL) with a pressure member for the oscillating delivery drive mechanism of a piston-cylinder unit. In the present preferred example of an application the stroke member is a simple eccentric disc which rotationally fixedly sits on the shaft (W) or is formed in one piece with it. The stroke member forms at its outer periphery a bearing surface (L1) which sits inside a corresponding cylindrical bearing surface (L2) of the coupling member and thus forms a stroke bearing (HL). Accordingly the construction does not have any pronounced crankshaft despite the multiple cylinder arrangement. --

Please replace the abstract with the following Abstract:

-- ~~The invention relates to an eccentric drive mechanism for volumetric pumps or motors, comprising the following features: a) at least one stroke member (6, 6'), which is rotationally fixed to the shaft (W) of the crank gear and has at least one stroke bearing (HL) that is eccentric in relation to the axis (XX) of the shaft; b) the stroke bearing (HL) connects the stroke member (HG) to a coupling member (KG) that plays no part in the rotational displacement, said member being connected to at least one pressure member (DG) for the oscillating delivery drive mechanism of at least one piston cylinder unit by means of a~~

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~~transversal bearing (QL); e) at least one pressure delivery source (DQ) for lubricant, which is connected on the output side to the transversal bearing (QL) via a system of channels; d) starting from a connection channel (KA) that is connected to the pressure delivery source (DQ), the channel system comprises a first channel (K1) running through the stroke member (HG) into the stroke bearing (HL) and at least one second channel (K2) running from said stroke bearing through the coupling member (KG) into the transversal bearing (QL)~~

Drive mechanism having stroke member (HG) fixed to shaft (W) of a mechanism having eccentric bearing (HL) which connects stroke member (HG) to coupling member (KG) connected by transverse bearing (QL) to pressure member (DG). Included is pressure source (DQ) for fluid lubricant connected to transverse bearing (QL). This connection includes first passage (K1) extending through stroke member (HG) into eccentric bearing (HL) and second passage (K2) extending from eccentric bearing through coupling member (KG) into transverse bearing (QL). A space arrangement provides for conduction of the fluid lubricant to second passage (K2), this space arrangement having an arrangement permitting a flow of the fluid lubricant between first and second passages The applications has been limited to unidirectional pumps. (K1,K2) only within low pressure phases of the fluid lubricant. Space arrangement is in bearing surface (L1) of stroke member (HG) and extends over part of peripheral section (UN) of stroke member (HG) corresponding to low pressure phase. - -

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Amendments to the Drawings

Please replace current Fig. 3 with substitute Fig. 3A and Fig. 3B that are submitted together with this paper. Applicant asserts that substitute Fig. 3A and Fig. 3B add no new matter.

Attachment: Two Drawing Sheets.